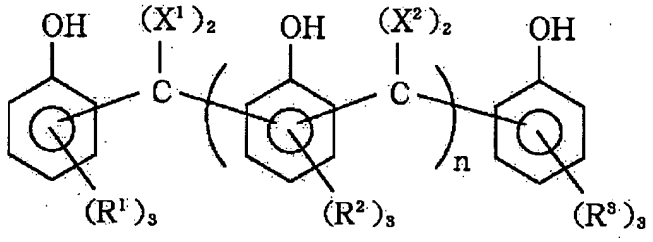
CLAIMS

1. A field effect transistor comprising at least a substrate, an organic semiconductor layer, an insulating layer, and a conductive layer, wherein

the insulating layer comprises a cured product of a phenol resin represented by a following general formula (1):



(1)

(wherein, R^1, R^2 and R^3 are each independently at least one selected from the group consisting of hydrogen atom, halogen atom, hydroxymethyl group, alkyl group having 1 to 12 carbon atoms, alkenyl group, alkinyl group, alkoxyl group, alkylthio group, and alkyl ester group, X^1 and X^2 are each independently at least one selected from the group consisting of hydrogen atom, alkyl group having 1 to 12 carbon atoms, alkenyl group, alkinyl group, and aryl group, and n is an integer of 0 to 2,000.)

2. The field effect transistor according to claim 1, wherein the conductive layer comprises a gate electrode, a source electrode, and a drain electrode, the insulating layer includes a gate

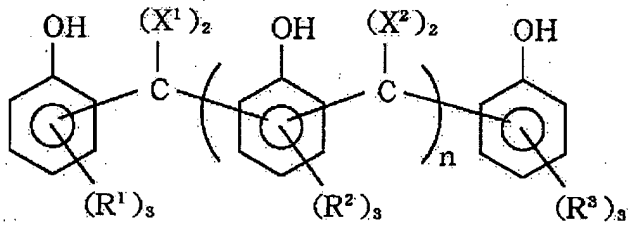
insulating layer, and the gate insulating layer is a cured product of a phenol resin represented by the above general formula (1).

3. The field effect transistor according to claim 2, wherein the thickness of the gate insulating layer is 100 nm to 1 μm.

4. The field effect transistor according to any one of claims 1 to 3, wherein part or all of the conducive layer comprises an agglomerate of conductive fine particles having a primary particle diameter of 5 nm to 2 μm.

5. A process for producing a field effect transistor comprising a substrate, an organic semiconductor layer, an insulating layer, and a conductive layer, the process comprising the steps of:

coating a thermosetting resin composition containing at least a phenol resin represented by the following general formula (1):



(1)

(wherein, R^1, R^2 and R^3 are each independently at

least one selected from the group consisting of hydrogen atom, halogen atom, hydroxymethyl group, alkyl group having 1 to 12 carbon atoms, alkenyl group, alkinyl group, alkoxyl group, alkylthio group, and alkyl ester group, X^1 and X^2 are each independently at least one selected from the group consisting of hydrogen atom, alkyl group having 1 to 12 carbon atoms, alkenyl group, alkinyl group, and aryl group, and n is an integer of 0 to 2,000.) and heating it to form the insulating layer.

6. The process for producing a field effect transistor according to claim 5, wherein part or all of the conductive layer is formed by applying a solution, dispersion, or paste of a conductive material or a precursor of the conductive material and heating it.

7. The process for producing a field effect transistor according to claim 5, wherein the softening point of the phenol resin contained in the thermosetting resin composition is in the range of 70 to 130°C.